

Name: \_\_\_\_\_

Block: \_\_\_\_\_

## Monohybrid Punnett Square Notes

**Punnett Square:** a drawing of a cross between 2 parents showing all possible outcomes

**Monohybrid Cross:** cross between 2 parents that shows the outcomes for one trait

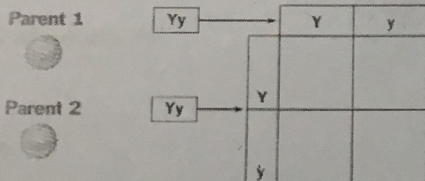
Steps:

### How to Make a Punnett Square

Punnett squares allow geneticists to predict the possible genotypes and phenotypes of offspring.

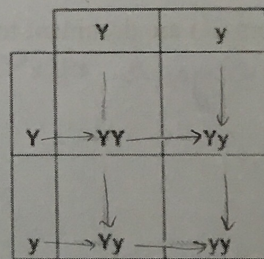
In this example, both parents are heterozygous for yellow-pea allele (Yy).

**1 Make the grid**  
Place the alleles of the gametes of one parent along the top of a grid and those of the other parent along the left-hand side.



### 2 Fill in the grid

Combine the parent alleles inside the boxes. The letters show the genotypes of the offspring.



Trait: height Alleles: Tall (T) and short (t)

Practice 1: homozygous dominant x homozygous recessive

TT x tt

	T	T
t	Tt	Tt
t	Tt	Tt

Geno: Tt - 100%

pheno: Tall - 100%

Practice 2: heterozygous x heterozygous

Tt x Tt

	T	t
T	TT	Tt
t	Tt	tt

Geno: TT, Tt, tt

1 : 2 : 1  
25% 50% 25%

Pheno: Tall : Short  
3 : 1



## Monohybrid Crosses using Punnett Square

For each cross:

- complete a Punnett square
- Identify all possible genotypes and phenotypes of offspring.
- Give the probability of each phenotypes

- Yellow seeds (Y) are dominant to green seeds (y) in peas.

homozygous yellow x green

- Two heterozygous yellow seeds are crossed together.

- Red flowers (R) are dominant to white flowers (r)

homozygous recessive x heterozygous

- In a pea plant round seeds (W) are dominant over wrinkled (w).

homozygous dominant x heterozygous

- Tongue rolling (T) is dominant to non-tongue rolling (t).

non-tongue roller x heterozygous tongue rolling

- Widows peak (P) is dominant to straight hairline (p)

heterozygous x straight hair